5

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/592,224	06/12/2000	Ulrich Emmerling	GR 99 P 2011	5498

7590 12/16/2003

LERNER AND GREENBERG
P.O. BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER	
YANG, CLARA I	
ART UNIT	PAPER NUMBER
2635	14

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/592,224	EMMERLING ET AL.	
	Examiner	Art Unit	
	Clara Yang	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 25 September 2003 have been fully considered but they are not persuasive.

In response to applicant's argument on pages 11 and 12 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a plurality of transponders transmitting an "authorization code" along with an answer and thereby enabling the interrogator to determine each transponder's identification after a single transmission of an interrogation code signal) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claims 1 and 14, as amended, only require a plurality of transponders to transmit simultaneously a "response code signal" and omits calling for a response code signal that comprises a transponder's identification. Because Dodd discloses that it is preferable that each transponder transmits a 4-bit reply, which is understood to be a response code signal, in response to each interrogation code signal (see Col. 5, lines 62 - 66), Dodd does teach all the limitations recited in claims 1 and 14. Consequently, Shober (U.S. Patent No. 5,952,922), Schuermann (U.S. Patent No. 5,347,280), and Schuermann (U.S. Patent No. 5,339,073), all as modified by Dodd, do teach claims 1 and 14.

Regarding the argument on page 15 that "Dobb et al. teach interrogation of individual bits and not the complete code" is inaccurate. Dobb's method increases the number of bit positions being interrogated by one bit with each interrogation step, as shown in Fig. 4. Assuming that transponders 1 - 8 are coded 000 to 111, such that only transponder 6, which is

coded 101, and transponder 8, which is coded 111, are present. Per Dobb, each interrogation step consists of the transmission of an interrogation signal that serves as a synchronization signal and selects the field or bit position to be examined. During the first interrogation step, the first field is checked; any transponder with a 0 in the first field will send a response in a first time slot, while any transponders with a 1 in the first field will send a response in a second time slot. In this example, both transponders 6 and 8 will transmit their reply signals during the second time slot. During the second interrogation step, the interrogator transmits a 1 as a field selection and synchronizing interrogation signal in order to check the second field of those transponders having a 1 in the first field. Transponder 6 will transmit its reply signal during the first time slot, and transponder 8 will transmit its reply signal during the second time slot. In the third interrogation step, the interrogator transmits 10 as a field selection and synchronizing interrogation signal in order to check the third field of those transponders having a 1 in the first field and 0 in the second field. No responses are received during the first time slot, and only transponder 6 responds during the second time slot since transponder 8 has a 1 in the second field, thus indicating to the interrogator that a transponder coded with 101 is present. Finally, the interrogator transmits 11 as a field selection and synchronizing interrogation signal in order to check the third field of those transponders having a 1 in the first field and 1 in the second field. No responses are received during the first time slot, and only transponder 8 responds during the second time slot, thus indicating to the interrogator that a transponder coded with 111 is also present. (See Col. 5, lines 7 - 56.) Furthermore, for enhanced security, Dobb teaches that at the end of the interrogation, the interrogator transmits a tag code, and the tag having the code provides verification (see Fig. 6. 16-bit verification and Col. 6, lines 47 - 52). Hence, Dobb does teach the interrogator transmitting a complete tag code.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 - 3, 5, 12, 14, 15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,339,073 (Dodd et al.).

Referring to Claims 1 and 14, Dodd's system and method, as shown in Figs. 1A and 1B, comprise: (a) an interrogation unit IU transmitting an interrogation signal (see Col. 1, lines 67 - 68; Col. 2, lines 1 - 3; and Col. 3, lines 59 - 65); and (b) a plurality of transponders T responding to the interrogation code and transmitting response signals to interrogation unit IU (see Col. 1, line 66; Col. 2, lines 4 - Col. 3, lines 65 - 68 and Col. 4, lines 1 - 4). Per Dodd, all transponders T comprises the means for sending a group reply signal to interrogation unit IU, and all transponders T sending a group reply signal in response to interrogation of a particular field do so simultaneously with an identical signal (see Col. 2, lines 20 - 26 and 60 - 62). Dodd adds that it is preferable that each transponder transmits a 4-bit reply signal, which is understood to be a response code signal, in response to each interrogation code signal (see Col. 5, lines 62 - 66).

Regarding Claims 2 and 15, Dodd's interrogation cycle comprises sending an interrogation signal from interrogation unit IU to determine the first field values of transponders T and sending additional interrogation signals until all field values have been determined (see Col. 3, lines 9 - 29). Because Dodd imparts that an interrogation unit may permanently or at intervals create a signal or field that will cause any transponder within range

to identify itself (see Col. 1, lines 39 - 41), it is understood that Dodd's interrogation cycle occurs regular intervals.

Regarding Claims 3, 5, and 18, Dodd teaches that the interrogation signal transmitted by interrogation unit IU also serves as a synchronizing signal (see Col. 5, lines 11 - 15, 28 - 31, 40 - 44, and 48 - 51), causing transponders T having the field values as indicated in each interrogation signal to generate a group reply signal/respond simultaneously (see Col. 2, lines 20 - 26 and 60 - 62). Dodd also imparts that transponder T has a microprocessor 24 that determines when a reply is to be made (see Col. 4, lines 1 - 4), thus implying that microprocessor 24 functions as a synchronization device, and that it is preferable that each transponder transmits a 4-bit reply signal, which is understood to be a response code signal, in response to each interrogation code signal (see Col. 5, lines 62 - 66).

Regarding Claim 12, Dodd's interrogation unit IU is part of an access control system (see Abstract; Col. 1, lines 64 - 68; and Col. 2, lines 1 - 38).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1 - 6, 8, 9, 11, 12, and 14 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,952,922 (Shober) in view of U.S. Patent No. 5,339,073 (Dodd et al.).

Referring to Claims 1 and 14, Shober's monitoring system comprises: (a) a transmitting and receiving station (hereinafter referred to as an "interrogator") configured to transmit an information signal (hereinafter referred to as an "interrogation code signal"); and (b) a plurality of transponders configured to simultaneously generate and transmit a response code signal to the interrogator upon receipt of the interrogation code signal. (See Col. 2, lines 2 - 6 and Col. 15, lines 50 - 60.) Shober teaches using frequency division multiple access (FDMA) in order to enable three different modes (the Interrogation Mode, the Messaging Mode, and the Location Mode) to occur simultaneously (see Col. 15, lines 35 - 64); consequently, during the Interrogation Mode, each tag transmits its response on the same subcarrier frequency using different time slots instead of simultaneously (see Col. 14, lines 13 - 16).

In an analogous art, Dodd's system and method, as shown in Figs. 1A and 1B, comprise: (a) an interrogation unit IU transmitting an interrogation signal (see Col. 1, lines 67 - 68; Col. 2, lines 1 - 3; and Col. 3, lines 59 - 65); and (b) a plurality of transponders T responding to the interrogation code and transmitting response signals to interrogation unit IU (see Col. 1, line 66; Col. 2, lines 4 - Col. 3, lines 65 - 68 and Col. 4, lines 1 - 4). Per Dodd, all transponders T comprises the means for sending a group reply signal to interrogation unit IU, and all transponders T sending a group reply signal in response to interrogation of a particular field do

so simultaneously with an identical signal (see Col. 2, lines 20 - 26 and 60 - 62). Dodd adds that it is preferable that each transponder transmits a 4-bit reply signal, which is understood to be a response code signal, in response to each interrogation code signal (see Col. 5, lines 62 - 66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method and system of Shober as taught by Dodd because the transmission of a simultaneous response to an interrogation signal (a) avoids conflict since the interrogation unit receives only one effective reply, (b) does not require any timing or arbitration scheme, and (c) is a faster identification method than the method in which each transponder transmits its response on a different time slot (see Col. 4, lines 54 - 63).

Regarding Claims 2, 16, and 17, the limitation "wherein said transmitting and receiving station is selectively configured to transmit the interrogation code signal at regular intervals, at irregular intervals, or as a reaction to a triggering event" is interpreted to mean that the interrogator is pre-configured to transmit interrogation signals at regular intervals, irregular intervals, or as a reaction to a triggering event. Shober teaches that in the location and messaging modes, an applications processor instructs some or all of the interrogators to transmit an interrogation signal to a specific transponder or transponders (see Col. 2, lines 64 - 66; Col. 3, lines 1-6; and Col. 9, lines 13 - 20 and 56 - 62). Here it is understood that the receipt of an instruction signal from an applications processor is a triggering event. Because the interrogator is triggered to transmit an interrogation code signal by the applications processor when operating in the location or messaging modes, it is understood that the interrogation code signal is transmitted at irregular intervals.

Regarding Claim 3, as shown in Fig. 3, Shober's transponder has a clock recovery circuit 304 for recovering synchronization from the interrogation code signal and for effecting

synchronization when transmitting a response code signal (see Col. 2, lines 2 - 6; Col. 4, lines 18 - 27; Col. 5, lines 27 - 28 and 31 - 34; and Col. 13, lines 51 - 54). Here it is understood that the clock recovery circuit is a synchronization device.

Regarding Claims 4, 5, and 18, Shober teaches that the interrogation code signal for each and all transponders contains framing and other synchronization information (see Col. 8, lines 52 - 55). Because Shober also discloses that the data in the interrogation code signal enables the transponders to synchronize to the timing of the interrogator (see Col. 13, lines 51 - 54), it is inherent that each transponder's synchronization device effects synchronization in accordance with the synchronization information that is contained in the interrogation code signal.

Regarding Claims 6, 9, and 19, each of Shober's transponders has a subcarrier frequency generator for generating a subcarrier frequency that is used to modulate the carrier frequency signal common to all transponders (see Fig. 3, subcarrier generator 308; and Col. 15, lines 41 - 55). Because Shober teaches that the transponders send their response code signals by using modulated backscatter (see Abstract), it is understood that the frequency of the continuous wave signal transmitted by the interrogator is the carrier frequency of the response code signals; consequently, it is inherent that the carrier frequency is common to all transponders. After receiving an interrogation code signal, each transponder's processor generates an information signal that is then sent to a modulator control circuit. The modulator control circuit uses the information signal to modulate a subcarrier frequency. The modulated subcarrier signal is then modulated upon the received continuous wave signal by a second modulator in order to produce modulated backscatter. (See Col. 4, lines 29 - 34 and 40 - 45.)

Regarding Claims 8, 11, and 20, Shober's interrogator has a plurality of input channels with filters in order to isolate the subcarriers of the received response code signals (see Fig. 15, filters f_{S1} and f_{S2}; Col. 18, lines 40 - 67; and Col. 19, lines 1 - 28).

Regarding Claim 12, Shober's interrogators form a part of an access control system (see Col. 1, lines 62 - 67 and Col. 2, lines 1 - 6).

Regarding Claim 15, as shown in Fig. 11, the interrogation code signal (or the "downlink") is transmitted at regular time intervals.

7. Claims 1, 6, 7, 9, 10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,347,280 (Schuermann) in view of U.S. Patent No. 5,339,073 (Dodd et al.).

Referring to Claims 1 and 14, Schuermann's monitoring system comprises: (a) an interrogator configured to transmit an interrogation code signal; and (b) a transponder configured to generate and transmit a response code signal upon receiving the interrogation code signal. (See Col. 3, lines 9 - 15.) Because Schuermann teaches that there is a need for a transponder that permits access verification by which only people whose transponder returns certain identification data to the interrogator are allowed access to a specific area (see Col. 1, lines 42 - 46), it is understood that Schuermann's system is designed to accommodate a plurality of transponders. Schuermann, however, omits teaching that the transponders simultaneously transmit their response code signals.

In an analogous art, Dodd's system and method, as shown in Figs. 1A and 1B, comprise: (a) an interrogation unit IU transmitting an interrogation signal (see Col. 1, lines 67 - 68; Col. 2, lines 1 - 3; and Col. 3, lines 59 - 65); and (b) a plurality of transponders T responding to the interrogation code and transmitting response signals to interrogation unit IU (see Col. 1, line 66; Col. 2, lines 4 - Col. 3, lines 65 - 68 and Col. 4, lines 1 - 4). Per Dodd, all transponders T

comprises the means for sending a group reply signal to interrogation unit IU, and all transponders T sending a group reply signal in response to interrogation of a particular field do so simultaneously with an identical signal (see Col. 2, lines 20 - 26 and 60 - 62). Dodd adds that it is preferable that each transponder transmits a 4-bit reply signal, which is understood to be a response code signal, in response to each interrogation code signal (see Col. 5, lines 62 - 66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method and system of Schuermann as taught by Dodd because the transmission of a simultaneous response to an interrogation signal (a) avoids conflict since the interrogation unit receives only one effective reply, (b) does not require any timing or arbitration scheme, and (c) is a faster identification method than the method in which each transponder transmits its response on a different time slot (see Col. 4, lines 54 - 63).

Regarding Claims 6 and 9, each of Schuermann's transponders contains a subcarrier frequency generator (see Col. 3, lines 38 - 40). The subcarrier signal is then modulated with a baseband data signal, and the modulated subcarrier signal is then used to modulate the carrier frequency signal (see Col. 2, lines 13 - 19).

Regarding Claims 7 and 10, each of Schuermann's transponders also has a resonant circuit 24 as shown in Fig. 2 that forms a carrier frequency signal (see Col. 3, lines 27 - 29). Here it is understood that resonant circuit 24 is a carrier frequency generator. Schuermann's transponder further comprises a transponder controller 30 that generates a response message at its output (see Col. 4, lines 16 - 18). Because the response message is then modulated upon the carrier frequency signal via switch 32 or the second modulator (see Col. 4, lines 18 - 20), it is understood that the response message is the modulated subcarrier signal referred to in Col. 2,

lines 15 - 16. Consequently, it is inherent that the transponder controller has a first modulator in order to modulate the subcarrier signal with the baseband data signal.

8. Claims 1, 2, and 12 - 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,552,789 (Schuermann) in view of U.S. Patent No. 5,339,073 (Dodd et al.).

Referring to Claims 1 and 14, Schuermann's system comprises (a) an on-board interrogation unit (hereinafter referred to as an "interrogator") configured to transmit an interrogation code signal; and (b) a plurality of transponders configured to generate and transmit a response code signal to the interrogator upon receipt of the interrogation code signal. (See Abstract and Col. 3, lines 5 - 17 and 59 - 61). Schuermann, however, omits teaching that the transponders simultaneously transmit their response code signals.

In an analogous art, Dodd's system and method, as shown in Figs. 1A and 1B, comprise: (a) an interrogation unit IU transmitting an interrogation signal (see Col. 1, lines 67 - 68; Col. 2, lines 1 - 3; and Col. 3, lines 59 - 65); and (b) a plurality of transponders T responding to the interrogation code and transmitting response signals to interrogation unit IU (see Col. 1, line 66; Col. 2, lines 4 - Col. 3, lines 65 - 68 and Col. 4, lines 1 - 4). Per Dodd, all transponders T comprises the means for sending a group reply signal to interrogation unit IU, and all transponders T sending a group reply signal in response to interrogation of a particular field do so simultaneously with an identical signal (see Col. 2, lines 20 - 26 and 60 - 62). Dodd adds that it is preferable that each transponder transmits a 4-bit reply signal, which is understood to be a response code signal, in response to each interrogation code signal (see Col. 5, lines 62 - 66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method and system of Schuermann as taught by Dodd

because the transmission of a simultaneous response to an interrogation signal (a) avoids conflict since the interrogation unit receives only one effective reply, (b) does not require any timing or arbitration scheme, and (c) is a faster identification method than the method in which each transponder transmits its response on a different time slot (see Col. 4, lines 54 - 63).

Regarding Claim 2, Schuermann's interrogator is able to transmit an interrogation code signal at regular time intervals (see Col. 8, lines 46 - 48) or only at a permissible time interval of need for information (see Col. 9, lines 47 - 49). Here it is understood that a permissible time interval of need is an irregular interval.

Regarding Claims 12 and 13, Schuermann's interrogator is mounted in a motor vehicle, and his monitoring system is a motor vehicle access control system, which is a type of an access control system (see Abstract; Col. 2, lines 60 - 63; and Col. 3, lines 59 - 67).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent No. 5,530,437 (Goldberg): Goldberg teaches a simulcast radio communication system comprising a plurality of portable communication units (PCUs), wherein teach PCU within a group has a unique identification bit pattern. Upon receiving an interrogation signal addressed to their group, the PCUs transmit simultaneously their identification bit patterns to a central controller.

- U.S. Patent No. 5,648,765 (Cresap et al.): Cresap teaches a tag transponder system wherein the tags transmit simultaneously data to at least one interrogator.

ॐ

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (703) 305-4086. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

CY
2 December 2003

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600